

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-66. (Cancel).

67. (New) A method of treating a staphylococcal infection in a human subject, comprising:

a) providing a subject comprising a staphylococcal infection, wherein said subject does not harbor a catheter or prosthetic device; and

b) administering to said subject a recombinantly produced lysostaphin in a dose of 0.16 to 5.0 mg/kg/day.

68. (New) The method of Claim 67, wherein said staphylococcal infection does not comprise infection of an organ selected from the group consisting of heart, blood, kidney, lung, bone and meninges.

69. (New) The method of Claim 67, comprising administering to said subject a recombinantly produced lysostaphin in a dose of 0.16 to 2.5 mg/kg/day.

70. (New) The method of Claim 67, wherein said recombinantly produced lysostaphin is administered via intravenous administration.

71. (New) The method of Claim 67, wherein said recombinantly produced lysostaphin is administered via subcutaneous injection.

72. (New) The method of Claim 67, wherein said infection comprises greater than 10^5 viable bacterial cells.

73. (New) The method of Claim 67, wherein said infection if left untreated possesses the ability to kill un-treated subjects within 48 hours.

74. (New) The method of Claim 67, wherein said infection if left untreated possesses the ability to kill un-treated subjects within 24 hours.

75. (New) The method of Claim 67, wherein said dose is administered in multiple doses.

76. (New) The method of Claim 67, further comprising administering an antimicrobial agent selected from the group consisting of rifamycin, a glycopeptides and combinations thereof.

77. (New) The method of Claim 76, wherein said antimicrobial agent is administered on a day subsequent to administration of said recombinantly produced lysostaphin.

78. (New) The method of Claim 67, wherein said method eliminates said infection in said subject.

79. (New) A method of treating a staphylococcal infection in a human subject, comprising:

- a) providing a subject comprising a staphylococcal infection, wherein said infection comprises infection of an organ; and
- b) administering to said subject a recombinantly produced lysostaphin in a dose of 5 to 20 mg/kg/day.

80. (New) The method of Claim 79, wherein said organ is selected from the group consisting of heart, blood, kidney, lung, bone and meninges.

81. (New) The method of Claim 79, wherein said subject harbors a catheter or prosthetic device.

82. (New) The method of Claim 79, comprising administering to said subject a recombinantly produced lysostaphin in a dose of 15 mg/kg/day.

83. (New) The method of Claim 79, wherein said recombinantly produced lysostaphin is administered via intravenous administration.

84. (New) The method of Claim 79, wherein said recombinantly produced lysostaphin is administered via subcutaneous injection.

85. (New) The method of Claim 79, wherein said infection comprises greater than 10^6 viable bacterial cells.

86. (New) The method of Claim 85, wherein said bacterial cells comprise methicillin resistant *Staphylococcus aureus* (MRSA).

87. (New) The method of Claim 79, wherein said infection if left untreated possesses the ability to kill un-treated subjects within 48 hours.

88. (New) The method of Claim 79, wherein said dose is administered in multiple doses.

89. (New) The method of Claim 88, wherein said multiple doses comprise three separate and equal administrations.

90. (New) The method of Claim 79, further comprising administering an antimicrobial agent selected from the group consisting of rifamycin, a glycopeptides and combinations thereof.

91. (New) The method of Claim 90, wherein said antimicrobial agent is administered on a day subsequent to administration of said recombinantly produced lysostaphin.

92. (New) The method of Claim 79, wherein said method sterilizes vegetations within said subject.

93. (New) The method of Claim 79, wherein said method eliminates said infection in said subject.